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Updating The LCP – A Place to Start

What is an LCP?

Local coastal program means a local government's (a) land use plans, (b) zoning ordinances, (c) zoning district maps, and (d) within sensitive coastal resource areas, other implementing actions, which, when taken together, meet the requirements of, and implement the provisions and policies of the California Coastal Act (PRC 30108.6)

Who is Issuing the Permits?

As of 2007, about 70% of the 128 local coastal program segments of the 75 coastal jurisdictions were certified and the local jurisdictions were issuing permits for most developments in those certified areas. In addition to areas that do not yet have a certified LCP, the Coastal Commission retains permitting jurisdiction below mean high tide, on public trust or tidelands, and may exercise permit authority within its appeal jurisdiction (see Coastal Act 30603).

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The California Coastal Act of 1976 ushered in an era of significant new land use planning in California. Local governments prepared and implemented Local Coastal Programs (LCPs) to carry out the Coastal Act's mandate to protect coastal resources and maximize public access to the shoreline. These LCPs established the allowable kinds, locations, and intensities of new development in the coastal zone, and set out other development limitations, to achieve the objectives of the Coastal Act. Once an LCP was certified by the Coastal Commission, local governments were given the responsibility of issuing coastal permits for most new development, subject to the standards of their LCPs.

In the last two decades LCPs have become an important part of California's coastal zone management program. But the Commission and many local governments have also recognized that LCPs need to be updated to remain effective. Significant changes have occurred that directly impact our efforts to protect California's coast. Population and development patterns have changed, leading to new pressures on resources and public access. New nonpoint source pollution laws are in place, and scientists have learned more about sensitive species, habitats and other coastal resources. Global warming and sea level rise are real concerns that must be considered in land use decisions.

Successfully providing for a community's need to grow and thrive while protecting resources depends on our ability to address such changes in our planning documents. If an LCP is out of sync with current conditions, knowledge, and practices, the potential for land use conflicts is exacerbated, and we are less likely to achieve either appropriate development or coastal resource protection. At the same time, comprehensive planning updates are increasingly difficult to undertake in part because there are so many issues and committed stakeholders. Resources for such planning are typically limited. This document is intended to support LCP update efforts by providing core guidance for meeting Coastal Act policies in the face of change. It does not cover every issue that should be considered in an update, but it does highlight recent Coastal Commission decisions and policy concerns that most coastal communities need to address. It is a place to start.

Getting Started – Some Initial Concerns

LCP updates should attempt to address every major policy area in Chapter Three of the Coastal Act. This guide discusses issues in 10 key areas, linked below for quick reference:

- Section 1 – Public Access.
- Section 2 – Recreation and Visitor Serving Facilities.
- Section 3 – Water Quality.
- Section 4 – Natural Resources (ESHA, Wetlands, etc.).
- Section 5 – Agricultural Resources
- Section 6 – Planning and Locating New Development.
- Section 7 – Scenic Resources.
- Section 8 – Coastal Hazards.
- Section 9 – Shoreline Erosion and Protective Structures.
- Section 10 – Energy, Industrial and Other Coastal Development.

LCP Amendment Submittal procedures may be found at:

Coastal Act Chapter 6

CCR Title 14, Div. 5.5 at Chapter 8 13500-13648

Updated Planning Needed to Support Policy Change

When governments developed LCPs in the 1980s, they included significant planning data and background analysis to support the proposed policies and ordinances. It is important to update this background data and analysis to support an LCP update. New information such as updated build out projections and analysis of available public services is key information for decision-makers to develop updated policy and to address consistency with the Coastal Act. The Commission will likely request such updated analyses to support an LCP Update amendment submittal.

Frequently Used Acronyms

LCP: Local Coastal Program

LUP: Land Use Plan

IP: Implementation Plan (zoning ordinances, zoning district maps, and other implementing actions)

NOAA: National Oceanic and Atmospheric Administration

Identifying the LCP

In many cases, different portions of LCPs have been certified at different times and undergone multiple revisions. This has sometimes led to confusion about what documents compose an LCP. An LCP update provides an opportunity to clarify what your LCP includes. You should specifically identify which documents, portion of documents, and maps are a part of the final certified program and thus intended to apply in the coastal zone. The relevant portions of any reference documents or sources cited should also be incorporated into the updated LCP submitted for certification. These steps will ensure that any changes to these documents are considered amendments to the LCP and thus will continue to apply in your coastal zone.

Local Context Matters

As explained above, this guide is intended to highlight recent policy concerns in core Coastal Act issue areas. It does not cover all topics that should be addressed in LCP Update; additional publications are planned on such topics as updating the procedural components of LCPs. In

addition, because resource conditions and other local circumstances differ from region to region, and by community, specific questions about what should be addressed in a specific LCP Update should be directed to the appropriate Commission District Office. Phone numbers for each District office are provided below. For more contact information go to: http://www.coastal.ca.gov/address.html.

District Office/Unit	Phone Number
North Coast District (Eureka)	(707) 445-7833
North Central Coast District (San Francisco)	(415) 904-5260
Central Coast District (Santa Cruz)	(831) 427-4863
South Central Coast District (Ventura)	(805) 585-1800
South Coast District (Long Beach)	(562) 590-5071
San Diego Coast District (San Diego)	(619) 767-2370
Headquarters Statewide Planning Office (San Francisco)	(415) 904-5280
Energy and Ocean Resources Unit (San Francisco)	(415) 904-5240
Statewide Enforcement Unit (San Francisco)	(415) 904-5200

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Public Access

Providing maximum public access to the coast is a fundamental goal of the Coastal Act. This includes the protection of *existing* and the provision of *new* public access. The authority for this mandate partially derives from the California Constitution, which declares that "access to the navigable waters of this State shall be always attainable for the people thereof. (Article 10, Section 4 of the California Constitution.) The Coastal Act also recognizes that the provision of public access needs to take into account public safety concerns and the protection of private property, and natural resources from overuse.

Review the principal Coastal Act policies concerning public access at Sections 30210 through 30214 and 30500(a) and 30604(c). These statutes can be found at: http://www.coastal.ca.gov/coastact.pdf.

LCPs are essential to reaching the goal of maximum public access. Coastal Act Section (§) 30500 requires that each LCP contain a specific Coastal Access Component to "assure that maximum public access to the coastal and public recreation areas is provided". In general, LCPs should provide policies and standards to assure that existing public access is protected, and that maximum public access to and along the shoreline is both planned for and provided with new development when warranted. Pursuant to Coastal Act §30531, LCPs should, to the maximum extent practicable, incorporate a public access inventory, including a map showing the specific locations of existing and proposed public access to the coast. In light of continuing population growth and demand to use California's beaches and shoreline recreational resources, it is imperative that local governments update LCP Access Components to reflect new information and changed conditions.

➢ *Overview: What should an updated public access component include?*

Ensure that your maps, policies and ordinances reflect new information and changed conditions, such as:

- Updated inventories and maps of existing and planned access, including the status and location of offers to dedicate easements, deed restrictions, and other sites suitable and needed for new public access;
- Current estimates of visitor and facilities use (see Recreation discussion also);
- Revised assessments of unmet demand and future demand, particularly where there is currently insufficient access, overcrowding or exclusion of the public;
- Updated assessments of any public safety concerns or fragile resources that may require additional access management measures;

- Updated measures to reduce any newly identified impediments to public access;
- Identification of any new encroachments on public beaches or accessways (e.g. illegal no parking signs or illegal barriers, private accessory development or landscaping on beaches) and updated requirements to remove them;
- Identification and protection of potential prescriptive rights;
- Implementation of the California Coastal Trail (CCT) by adding new policies and ordinance provisions to provide for the trail, and maps locating existing and planned segments of the trail;
- New mitigation for unavoidable impacts of recreational beach loss from permitted development;
- Updated zoning ordinances to provide for access needs, including ensuring that residential zone districts allow public recreational use corridors, easements, etc.

➢ *Where can I read some examples of recently updated access components?*

Some recently revised Public Access components are:

- City of San Diego La Jolla LUP segment at http://www.sandiego.gov/planning/community/profiles/pdf/cp/cpljfullversion.pdf (see pages 26 - 33 and Appendices/Access Inventories);
- City of Newport Beach LUP at http://www.city.newport-beach.ca.us/Pln/LCP/LCP.htm (Chapter 3).

➢ *What are some specific issues that should be addressed in an LCP Update?*

The following highlights new information that should be considered in updating the Access Component:

Definition of the California Coastal Trail

A continuous public right-of-way along the California coastline; a trail designed to foster appreciation and stewardship of the scenic and natural resources of the coast through hiking and other complementary modes of non-motorized transportation.

♦ Implementing the California Coastal Trail

Completing a California Coastal Trail (CCT) has been a longstanding vision in California. In 2001 the legislature directed the State Coastal Conservancy, in consultation with the Coastal Commission and State Parks, to coordinate the development of the trail. Coastal Act §30609.5(a) provides for the protection of any public land that may have been designated as part of the CCT. An updated LCP Access Component is the appropriate vehicle for planning for and designating the CCT. For guidance in incorporating CCT provisions in the LCP, review the report Completing the California Coastal Trail, January 2003, at: http://www.coastal.ca.gov/access/coastal-trail-report.pdf.

The Malibu LCP provides a good example of standards by which the CCT should be designed and implemented. Each LCP should contain comparable standards to designate the CCT and ensure that it is developed.

- City Of Malibu LUP policies pages 27-29 LUP at http://www.coastal.ca.gov/ventura/malibu-lup-final.pdf, and;
- City of Malibu Zoning Ordinance provisions pages 191-208 at http://www.coastal.ca.gov/ventura/malibu-lip-final.pdf.

♦ Temporary events that can affect public access

Certain temporary events have the potential to impact public coastal access (and other resources) and require coastal permits. Your LCP should address such topics as the type, location, and intensity of such events, including scheduling, transportation to the event, how the location of the event will affect public use, signage, mitigation measures, and clean-up. The Commission has adopted guidelines addressing the potential regulation of temporary events:

- Regulation of Temporary Events, Letter from P.Douglas to Planning Directors, January 23, 1998 with Guidelines for the Exclusion of Temporary Events, May12, 1993 as attachment to letter.

The Commission also has responded through individual permit actions and LCP amendments to the growing number of special and annual summer events that would commit large areas of public beaches to special, commercial events on most summer weekends.

Check out a couple of recent Commission decision concerning beach volleyball and other events:

- http://documents.coastal.ca.gov/reports/2006/4/T8f-4-2006.pdf;
- http://www.coastal.ca.gov/lb/A-5-MNB-03-075-6mm3.pdf;
- http://www.coastal.ca.gov/sc/3-03-034.pdf.

The City of Carmel by the Sea LCP includes an ordinance regarding temporary events. See the Carmel Implementation Plan §17.52.10 (I) at: http://ci.carmel.ca.us/indexplanning.html.

♦ Protecting and managing public parking

The Commission has reviewed an increasing number of proposals to implement residential preferred parking restrictions that can adversely impact public access. Generally, the Commission has not favored such proposals if they impact access by the general beach-going public, including beach use and access during non-peak times such as evening/overnight use, or where the parking area in question involves any beach parking. LCPs should be amended to include updated parking inventories, including identification of existing restrictions, supply and

demand analyses, and standards to address potential conflicts between various parking user groups.

♦ Including Provisions to Expand Alternative Transportation

Access Components should include provisions to maximize public access through expanded transit as called for in Coastal Act §30252 Such alternatives are increasingly needed to address roadway congestion as well as climate change due to greenhouse gases.

You might also consider including bicycling. Read Chapter 1000 of the Highway Design Manual *Bikeway Planning and Design*. http://www.dot.ca.gov/hq/oppd/hdm/pdf/chp1000.pdf.

♦ Managing Time Restrictions and User Fees on Public Use

Many local governments are exploring ways to manage public access through measures such as beach and parking lot nighttime curfews and increasing fees. These measures can adversely affect public access and in most cases require issuance of a coastal development permit because they constitute "development" as defined in Coastal Act §30106 ("…change in the intensity of use of water, or of access thereto;…"). The majority of restrictions allowed by the Commission have been limitations on vehicles entering beach parking lots, not on actual use of the beach. Access Components should be updated to clarify which measures will be applied and under what conditions, in order to protect maximum public access. For example see:

- A-6-COR-06-86 (Coronado curfews at Bay View Park) at http://documents.coastal.ca.gov/reports/2006/11/T11e-11-2006.pdf.

♦ Avoiding and Mitigating Beach Encroachments

Your updated Access Components should include measures to ensure that development avoids or minimizes and mitigates encroachment on beaches or accessways. Updating inventories of beach ownership is important. In areas where public use is allowed on private land, you might include programs to maintain that access. Your LCP should limit structural development on public beaches to development that is essential for public access or safety, such as lifeguard towers. In general, your LCP should not allow private development to encroach onto public beaches.

♦ Avoiding Private Impediments to Beach Access

Public access may be adversely affected by such development as installation of "private beach" and "private parking" signs, and landscaping and painting red curbs in the public street right-of-way. LCP access components should prohibit installation of such development.

♦ Valuing Recreational Beaches and Developing Mitigation

Development that encroaches on sandy beaches or other accessible shorelines may adversely impact public access. Updated Access Components should include revised policies and ordinances to ensure that new development avoids such impacts or if avoidance is not possible, that the impacts are fully mitigated. Mitigation needs to address the potential impacts to public recreation, including through evaluation of losses to recreational value where appropriate. For examples of Commission decisions involving recreational beach impacts from shoreline structures, see the following reports:

- Commission action on Ocean Harbor House at http://www.coastal.ca.gov/sc/Th13a-1-2005.pdf.
- Commission action on Las Brisas seawall at http://www.coastal.ca.gov/sd/7-2005-F6b.pdf.

Several coastal cities have been undertaking studies on this topic that could provide guidance. For more information see:

- Philip G. King, *Economic and Fiscal Impact of Carlsbad Beaches*, 2005.
- Philip G. King, *Economic Analysis of Beach Spending and the Recreational Benefits of Beaches in the City of San Clemente*, 2001 at http://userwww.sfsu.edu/~pgking/sanclemente%20final%20report.pdf.
- Philip G. King, *Economic Analysis of Beach Spending and the Recreational Benefits of Beaches in the City of Carpinteria*, 2001 at http://userwww.sfsu.edu/~pgking/carpenteria.pdf.
- Daniel Lew and Douglas Larson, *Valuing Recreation and Amenities at San Diego County Beaches*. 2005.
- Philip King and Douglas Symes *The Potential Loss in GNP and GSP from a Failure to Maintain California's Beaches at* http://userwww.sfsu.edu/~pgking/Econ%20Impact%20of%20Out%20of%20State%20and%20For%20tourism%20v7.pdf.

♦ Addressing Locked Gates and Roads

The Commission has seen an increase in requests to install gates to prevent public access to private roads or subdivisions. Such development can impact public access and recreation by blocking access to adjacent public trails and recreational areas. LCP designations and ordinances should discourage private roads and gates in new subdivisions and include standards to protect public access, including criteria for when gates may be considered. For example, gates should only be considered:

- If the private road has not been subject to any public use and does not provide a linkage between any existing or future public recreational area;

- If the area has no substantial evidence of prescriptive rights that would be affected;
- If the road has not been used historically and could not provide a critical trail link in the future;
- If the road does not provide an essential escape route during time of high fire hazard.

♦ Considering Public Access in Road Abandonments

The coastal development permitting process can help ensure coastal access and resources are protected along abandoned roads. Some abandoned roads have the potential to provide public access opportunities, like parking or pedestrian access, or protection of a sensitive resource, like habitat. Your LCP should clarify that coastal development permits are required for abandonment of public rights of ways, such as street ends, that may affect public access. For some discussion see:

- City of Los Angeles Street, vacation of a public right-of-way: http://documents.coastal.ca.gov/reports/2006/4/T10b-4-2006.pdf.

Other techniques you could employ include permitting only partial abandonment of the road, creating public access easements, or deeding part of the road to a public recreational agency. An example of the Commission addressing road abandonment in an LCP is found on page 48 at: http://www.coastal.ca.gov/sc/CML-LUP-SUB-R3.pdf.

♦ Comprehensive Beach Management

Management measures can help address many issues concerning the beach, including access, recreation and wildlife preservation. These might include temporary closures for snowy plovers, events, beach grooming, and sandbar breaching, all of which are defined as development under the Coastal Act and require coastal permits. To avoid the need for multiple permits and to address sometimes competing policy guidance (e.g. providing public access while protecting resources), you could prepare beach management plans and incorporate them into your local coastal programs.

The Commission staff has provided some information on preparing beach management plans in *Beach Management: Issues and Solutions*, December 1996.

For a recent Commission action on the City of Santa Cruz beach management plan, see:

- http://documents.coastal.ca.gov/reports/2006/8/Th12a-8-2006.pdf.

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Recreation and Visitor Serving Facilities

The Coastal Act places high priority on the protection and maximization of recreation and visitor serving land uses, including lower cost facilities. LCPs certified almost 20 years ago will have outdated information on visitor use and demand. As a result, your LCP may not reserve adequate areas and infrastructure capacity to meet current and projected recreation and visitor facility needs.

➢ *Overview: What should an updated LCP include?*

LCP policies should maximize access to recreation and visitor facilities as a priority use under the Coastal Act. There may be obvious areas of overlap with your Public Access component.

Review the principal Coastal Act policies concerning recreation and visitor serving uses at Sections 30212.5, 30213, 30220 through 30224 and 30250 and 30250. These statutes can be found at: http://www.coastal.ca.gov/coastact.pdf.

- Update the inventory and map of existing shoreline and near-shore recreational areas and facilities and support facilities (ex, beaches, harbors, parking lots/spaces, visitor commercial).
- Evaluate current information on the use of, and demand for, recreation areas and facilities. Has development authorized since certification adequately met the demand? Update estimates of future demand.
- Review existing areas designated for recreation and visitor facilities, especially oceanfront lands. Review patterns of development. Do visitor serving commercial uses remain a priority use over private residential, or general industrial and commercial land uses? Are there new measures available to ensure that such visitor uses will remain a priority use?
- Consider the need to designate and zone additional areas for recreation and visitor facilities to meet new estimates for population growth and projected demand.
- Are more areas for upland facilities needed to support expanded recreational water use?
- Update the inventory and map of existing visitor accommodations (campground, RV parks, motels, inns), by type, capacity, ownership and price range. Consider expanding designated areas to ensure a range of affordable facilities.
- Update circulation/transportation facilities policies to increase alternative transportation and parking to serve recreational developments. If new development of affordable overnight accommodations is not occurring, means to travel to and/or park at the coast in order to recreate will become more critical.

- Update the LCP to identify future public agency acquisitions, development or redevelopment, and management of public recreation and visitor-serving facilities.

➢ *What are some new issues in recreation and visitor serving planning and regulation?*

♦ Condominium Hotels/Timeshares

New development of overnight facilities that are owned as private residential units but managed as part of a hotel rental pool are a more recent development trend in the California coastal zone. This type of overnight accommodation has an untested track record in ensuring protection of public visitor-serving facilities as a priority use. The Commission has addressed this emerging trend for "condo hotels" (or other types of fractional ownership of overnight units) in a special workshop and several recent permits and LCP Amendments. The Executive Director has also issued interim guidance to local governments for addressing this trend: http://www.coastal.ca.gov/legal/condo-hotels.pdf

In updating the LCP if such uses are to be considered, it is critical to include adequate protections for visitor overnight uses in such developments, as well as mitigation of impacts to these priorities uses and prohibitions against converting existing hotel units to such residential uses. You can view workshop materials at http://documents.coastal.ca.gov/reports/2006/8/W3-8-2006.pdf

As this issue develops, new projects will be evaluated with whatever new information is available.

♦ Recreational Facility Upgrades and Conversions

A current trend along the coast is for property owners to propose upgrades or conversions of their overnight facilities. Such changes can result in narrower ranges in price and type of overnight accommodations including the loss of lower-coast visitor-serving facilities in the coastal zone. This problem is compounded by the fact that new development proposals are often for high-end hotels. As you update your LCP, go beyond designating appropriate areas for overnight accommodations. Include policies and standards to ensure an appropriate mix of accommodations over time. Mitigations for allowing luxury or higher priced accommodations could include construction or retention of lower cost facilities such as cabins, a tent campground or hostel, and more affordable hotel/motel developments.

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Water Quality Protection

The Coastal Act requires the protection and enhancement of marine and coastal water quality. In the last twenty-five years experts have identified nonpoint source (NPS) polluted runoff as the leading cause of water pollution both at the coast and inland. The federal government has responded with mandates to States under the Clean Water and Coastal Zone Management Acts to address the issue. In California, the Coastal Commission and the State Water Quality Control Board have developed a joint nonpoint source pollution control program that provides a single unified, coordinated statewide approach to dealing with NPS pollution. A total of 28 state agencies are working collaboratively through the Interagency Coordinating Committee to implement the NPS Program Plan.

Review the principal Coastal Act policies concerning Marine Resources and Water Quality at Sections 30230 through 30236. These statutes can be found at: http://www.coastal.ca.gov/coastact.pdf.

Given the widespread nature of nonpoint source pollution, managing land use on a watershed basis is critical. In the coastal zone, LCPs are a key mechanism for achieving coastal water resource protection. In conjunction with the State's Stormwater and Total Maximum Daily Load (TMDL) Programs, which are administered by the State and Regional Water Quality Control Boards, LCPs can provide the planning and regulatory framework for addressing NPS water quality impacts. LCPs should include policies, ordinances, and programs that establish Best Management Practices (BMPs) for new development both during construction and for the life of a project. They should also incorporate appropriate aspects of local or regional stormwater permits, statewide nonpoint source policies and TMDL requirements.

➢ *What should an updated water quality component include?*

It is important that LCPs reflect the many advances in water quality planning and regulation including:

- Identify and update the mapping of watersheds in your jurisdiction to support watershed assessment and planning.
- Identify the land uses in the watershed and their relative impacts on coastal water resources.
- Identify land areas that support maintenance of the hydrologic cycle (e.g. open space where rainfall can infiltrate or drain slowly to surface waters).
- Incorporate evaluation of potential pollutant sources and changes to local hydrology.

- Update Land Use designations and development standards to reflect watershed management and protection of water quality, including for example: designation of conservation areas and buffers to protect riparian vegetation and wetland areas, and land use designations that prevent long term or cumulative adverse impacts on water quality from non-sewered development.
- Update LCP policies to ensure implementation of appropriate polluted runoff management measures as found in the California Nonpoint Source Encyclopedia.
- Implement Best Management Practices through revisions to policies and ordinances on Grading, Drainage and Erosion Control, Landscaping Requirements and Post-Construction water quality control requirements.
- Integrate NDPES permit, TMDLs and other requirements of the State and Regional Water Resources Control Boards into provisions of the LCP.

♦ The Updated LCP Should Also Provide:

- Guidance on review of permit applications for potential impacts on coastal water quality, including approval from public works staff that the new development will not adversely impact stormwater quality.
- Guidance on incorporation of appropriate Best Management Practices (BMPs) in new or expanding development. Examples can be found in the Stormwater BMP Handbooks.
- Requirements for Treatment Control BMPs for significant development that comply with applicable water quality permits (e.g., municipal stormwater permits) and that will address potential adverse impacts of development.
- Requirements that significant development include a plan, certified by an appropriate licensed professional, that describes how Site Design, Source Control and Treatment Control BMPs will be used to mitigate adverse impacts of a development.
- Identification of the size of storm that will dictate the design of BMPs (typically the "85th percentile storm event").

➢ *What are some examples of water quality policies?*

♦ General Policies

- Minimize Introduction of Pollutants

  Design and manage development to minimize the introduction of pollutants into coastal waters (including the ocean, estuaries, wetlands, rivers, streams and lakes) to the maximum extent practicable.

- Minimize Increases in Peak Runoff Rate

  Design and manage development to minimize increases in peak runoff rate, to avoid detrimental water quality impacts caused by excessive erosion or sedimentation.

- Protect Water Quality and Restore Impaired Waters

  Promote both the protection of unimpaired water quality and the restoration of impaired waters.

♦ Site Design and Source Control Policies

- Incorporate Effective Site Design and Source Control BMPs

  Include effective site design and source control Best Management Practices (BMPs) in all developments, where feasible.

- Apply and Maintain Source Control BMPs

  Require the property owner, homeowners' association, or local government, as applicable, to apply and maintain source control BMPs throughout the life of the development.

- Preserve Functions of Natural Drainage Systems

  Site and design development to preserve the infiltration, purification, and retention functions of natural drainage systems that exist on the site.

- Minimize Impervious Surfaces

  Minimize impervious surfaces in new development, especially directly connected impervious areas, and where feasible, increase the area of pervious surfaces in redevelopment.

- Infiltrate Runoff

  Retain or infiltrate dry weather runoff and runoff from the design storm on the development site, so that the impacts of new or redeveloped impervious surfaces are avoided or minimized. Preserve natural hydrologic conditions to the maximum extent practicable. Alternative management practices may be substituted where it can be shown that infiltration BMPs may result in adverse impacts (e.g., significantly increased risk of slope failure or impacts to an unconfined aquifer).

- Engage in Water Quality Public Education and Outreach

  Encourage and support public outreach and education about the water quality impacts of development and other land uses.

♦ Construction Pollution Control Policies

- Minimize Polluted Runoff from Construction

Minimize erosion, sedimentation, and other polluted runoff from development's construction-related activities, to the maximum extent practicable.

- Minimize Land Disturbance During Construction

  Minimize land disturbance during construction (e.g., clearing, grading, and cut-and-fill), especially in erosive areas (including steep slopes, unstable areas, and erosive soils), to avoid increased erosion or sedimentation. Incorporate soil stabilization BMPs on disturbed areas as soon as feasible.

♦ Treatment Control Policies

- Incorporate Treatment Control BMPs Where Necessary

  Require structural treatment BMPs along with site design and source control measures when the combination of site design and source control BMPs is not sufficient to protect water quality.

- Size Treatment Controls Appropriately

  Where structural BMPs are required for post-construction treatment of runoff, structural BMPs (or "suites of BMPs") shall be designed to treat, infiltrate, or filter the amount of stormwater runoff produced by all storms up to and including the 85th percentile, 24-hour storm event for volume-based BMPs, and/or the 85th percentile, 1-hour storm event (with an appropriate safety factor of 2 or greater) for flow-based BMPs.

- Maintain Structural Treatment Control BMPs

  Require the inspection, cleaning, and repair of structural treatment control BMPs as necessary, to ensure proper functioning for the life of the development.

➢ *Where can I read some examples of water quality policies and LCP updates?*

- California Nonpoint Source Encyclopedia at www.swrcb.ca.gov/nps/encyclopedia.html.
- The California Association of Stormwater Agency's Stormwater BMP Handbooks at www.cabmphandbooks.com.
- The Commission's Water Quality Program website at http://www.coastal.ca.gov/nps/npsndx.html.

Here are some updated LCP Water Quality Components:

- City Of Malibu LUP – see the water quality sections in Chapter 3.C.4 and Chapter 5.C.9 at http://www.coastal.ca.gov/ventura/malibu-lup-final.pdf.
- City of Malibu Zoning Ordinance provisions in Chapters 17 and 18 at

http://www.coastal.ca.gov/ventura/malibu-lip-final.pdf.

- City of Newport Beach LCP water quality policies at: http://www.city.newport-beach.ca.us/Pln/LCP/Internet%20PDFs/CLUP%20Part%204.pdf.
- The City of Laguna Beach Topic 4 of Conservation /Open Space Element at http://www.lagunabeachcity.net/development/informationguides/pdf/plans/Open%20Space-Conservation.pdf.
- Title 16 of the City of Laguna Beach Code: at http://bpc.iserver.net/codes/lagunab/_DATA/TITLE16/Chapter_16_01__WATER_QUALITY_C.html.

➢ *What are some current issues in water quality management?*

The following information should be considered in updating policies for protection of coastal water quality.

♦ Low Impact Development

Low Impact Development (LID) is intended to benefit water supply and contributes to water quality protection. Unlike traditional stormwater management, which collects and conveys storm water runoff through storm drains, pipes, or other conveyances to a centralized storm water facility, LID uses site design and storm water management to maintain the site's pre-development runoff rates and volumes. The goal of LID is to mimic a site's predevelopment hydrology through techniques that infiltrate, filter, store, evaporate, and detain runoff close to the source of rainfall. LID has proven effective in other parts of the country. More information can be found in the following fact sheet: http://www.coastal.ca.gov/nps/lid-factsheet.pdf.

♦ Effects of Impervious Surfaces on the Hydrologic Cycle

With natural groundcover, 25% of rain infiltrates into the ground and only 10% ends up as runoff (65% is shallow surface evapotranspiration-meaning that some travels to the aquifer, some stays in the shallow ground and flows downhill to a wet feature like a creek or seep, and some evaporates over the following season). As imperviousness increases, less water infiltrates and more runs off. In highly urbanized areas, over one-half of all rain becomes surface runoff, and deep infiltration is only a fraction of what it was naturally. The increased surface runoff requires more infrastructure to minimize flooding. Natural waterways end up being used as drainage channels, and are frequently lined with rocks or concrete to move water more quickly and prevent erosion. In addition, as deep infiltration decreases, the water table drops, reducing groundwater for wetlands, riparian vegetation, wells, and other uses.

More information can be found in the following fact sheet: http://www.coastal.ca.gov/nps/watercyclefacts.pdf.

♦ Runoff Controls In Landscape Plans

Recent legislation (AB 1881 effective January 1, 2007) requires the Department of Water Resources to update, and local agencies to adopt, the model local water efficient landscape ordinance, including restrictions on overspray and runoff. Your LCP should be updated to address these new requirements. For more information see: http://www.leginfo.ca.gov/pub/bill/asm/ab_1851-1900/ab_1881_bill_20060928_chaptered.html.

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Protecting Sensitive Habitats and Other Natural Resources

The Coastal Act sets high standards for the protection of Environmentally Sensitive Habitat Areas (ESHA), wetlands, riparian areas, and other natural resources in the coastal zone. The Commission has gained significant experience in applying the Coastal Act and LCPs to the protection of such resources. Also, there have been some important changes regarding the protection of ESHAs that stem from new scientific research, such as the identification of new sensitive species, or from court decisions interpreting the requirements of the Coastal Act.

➢ *What should an updated resources component include?*

Review the principal Coastal Act policies concerning Marine Resources and ESHA in Sections 30107.5, 30121, 30240, 30230, 30231, 30233. These statutes can be found at: http://www.coastal.ca.gov/coastact.pdf.

Based on the Commission's regulatory experience and new information, the Commission has identified a number of areas where LCP Resource policies and ordinances should be updated. As applicable, an LCP should include:

- A definition of ESHA that is consistent with the Coastal Act §30107.5.
- A definition of wetland that is consistent with Coastal Act §30121 and §13577(b) of the Code of Regulations.
- An updated map and description of existing, known habitats, with strengthened requirements for conducting site specific biological evaluations and field observations to identify ESHA and other sensitive resources at the time of proposed development or plan amendments.
- Clear policies stating that the identification of ESHA, wetlands, etc. will be determined in part through an evaluation of existing known resources at the time of proposed development or plan amendment.
- Review of areas adjacent to environmentally sensitive habitat areas and parks and recreation areas to ensure land use designations and development standards that are compatible with the protection of the resources.
- Updated setback requirements to reflect new scientific information on adequacy of buffers.
- Updated requirements for ensuring complete and detailed restoration and monitoring plans for projects involving habitat mitigation and restoration.

➢ *Where can I read some examples of updated resource policies?*

- City of Malibu LUP policies pages 38-75 of the LUP at http://www.coastal.ca.gov/ventura/malibu-lup-final.pdf.
- City of Malibu Zoning Ordinance provisions at http://www.coastal.ca.gov/ventura/malibu-lip-final.pdf.

San Luis Obispo County Periodic LCP Review at:

- http://www.coastal.ca.gov/recap/slo/slo-intro.pdf.
- http://www.coastal.ca.gov/recap/slo/slo-esha.pdf.

City of Newport Beach LUP Coastal Resource Protection at:

- http://www.city.newport-beach.ca.us/Pln/LCP/Internet%20PDFs/CLUP%20Part%204.pdf.

➢ *What are some of the issues to be addressed in an updated resources component?*

The following highlights information that should be considered in updating policies for protection of environmentally sensitive habitat areas and other important natural resources.

♦ Avoidance of Impacts to ESHA

The Bolsa Chica decision [*Bolsa Chica Land Trust v. Superior Court* 71 Cal. Ap.4th 493, 507] confirmed that the Coastal Act requires that ESHA be avoided and buffered from development impacts and that providing mitigation is not sufficient justification for allowing development with avoidable impacts to ESHA. LCPs should clearly state that only "resource dependent" development, such as restoration or nature study, is allowed in ESHA, consistent with Coastal Act §30240.

♦ Need for Updated Definitions

Since many LCPs were certified, there have been problems on appeals and increased litigation stemming from confusing and inconsistent definitions for wetlands and other ESHA. The general LCP definition of ESHA should mirror Coastal Act §30107.5; similarly the definition of wetland should be that of §30121 of the Coastal Act and §13577(b) of the Calif. Code of Regulations (CCR). Note that the Coastal Commission relies on a potentially more inclusive, one-parameter definition of wetlands whereas the U.S. Army Corps of Engineers uses a three parameter definition under its federal authorities. The Commission conducted a workshop on wetlands delineation that may be useful in understanding these distinctions: *Definition and Delineation of Wetlands in the Coastal Zone* http://documents.coastal.ca.gov/reports/2006/11/Th3-11-2006.pdf.

In addition, see, for example, the revised findings for A-2-HMB-01-011(Keenan/Beachwood Subdivision).

♦ Use of Resource Maps

In recent years the Commission has identified at least two major concerns related to the use of LCP Resource Maps. First, many LCPs adopted a decade or more ago may be relying on maps that no longer adequately illustrate the potential presence of ESHAs given new scientific information and changes in the natural environment. This could result in the lack of protection of ESHA. Second, some jurisdictions may be relying only on outdated maps in determining whether ESHA exists on a site, potentially resulting in an incorrect determination of appealability and, possibly, resulting in litigation. While maps can serve as one illustrative tool to help identify potential resources, the presence of ESHA on the ground dictates the application of policies. LCPs must be updated to ensure that ESHA and wetland determinations are based on site specific biological surveys at the time of proposed development or plan amendment, and that any area that actually meets the definitions of either must be given all the protection provided for in the Coastal Act, regardless of its prior identification on a resource map. Be sure your LCP policies and filing requirements ensure that a thorough site-specific assessment of habitat and resources is undertaken as part of the development review process in order to identify any such resources.

♦ Identifying ESHA

Coastal Act §30107.5 defines environmental sensitive area as: any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.

ESHA designations are often based on the presence of rare habitats or on areas that supports populations of rare, sensitive, or especially valuable species or habitats. The Department of Fish and Game identifies rare habitats in their *List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database*. Rare species also include those that are listed under the California or Federal Endangered Species act, those that are listed as "1b" or "2" by the California Native Plant Society, and those for which there is other compelling evidence of rarity such as published academic studies.

More online tools have become available recently to assist in site specific analysis, including such resources as the California Natural Resources Diversity Database at http://www.dfg.ca.gov/bdb/html/cnddb.html and http://www.dfg.ca.gov/bdb/pdfs/natcomlist.pdf, as well as the Inventory of the California Native Plant Society at http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi

For an example of an updated Resources Component, including ESHA definitions, see Chapters 3 and 4 of the City of Malibu LCP found at http://www.coastal.ca.gov/ventura/malibu-lup-final.pdf and http://www.coastal.ca.gov/ventura/malibu-lip-final.pdf.

Also check out Chapter 4 of the *San Luis Obispo County LCP Periodic Review* at http://www.coastal.ca.gov/recap/slo/slo-esha.pdf, http://www.coastal.ca.gov/recap/slo/slo-intro.pdf

♦ Monitoring Requirements

Updated LCPs should include specific provisions to require a complete and detailed Restoration and Monitoring Plan for any proposed or required habitat restoration or creation. Because submittal of conceptual plans can cause review delays, it is recommended that LCP filing requirements be updated to require that applications that involve habitat restoration or mitigation not be deemed filed until submittal of such a plan. Nearly all significant restoration projects will require preliminary field sampling and the results of this sampling should be included in the Restoration and Monitoring Plan.

Your updated LCP should ensure that such a Restoration and Monitoring Plan:

- Is a stand-alone document that describes actual methods and practices to be employed,
- Avoids such things as marginal notes on large format engineering or landscaping plans, simple tables and bulleted lists or mere references to information in other planning documents or to literature on field or statistical methods,
- Is able to be implemented by a technical specialist who has not been involved in the project, and
- Is written in such a way that an educated layman could understand and evaluate the plan.

Restoration and Monitoring Plans should include the following key components:

- ❑ A clear statement of the goals of the restoration for all habitat types. Characterization of the desired habitat, including an actual habitat, sampled that can act both as a model for the restoration and as a reference site for developing success criteria.
- ❑ Sampling of reference habitat using the methods that will be applied to the restoration site with reporting of resultant data.
- ❑ Quantitative description of the chosen restoration site.
- ❑ Requirements for designation of a qualified restoration biologist as the Restoration Manager who will be personally responsible for all phases of the restoration.
- ❑ Prohibition on assignment of different phases of the restoration to different contractors without onsite supervision by the restoration manager.
- ❑ A specific grading plan if the topography must be altered.
- ❑ A specific Erosion Control plan if soil or other substrate will be significantly disturbed during the course of the restoration.
- ❑ A Weed Eradication Plan designed to eradicate existing weeds and to control future invasion by exotic species that is carried out by hand weeding and supervised by a restoration biologist.

- A Planting plan that specifies detailed plant palette based on the natural habitat type that is the model for the restoration and using local native stock and requiring that if plants, cuttings, or seed are obtained from a nursery, the nursery must certify that they are of local origin and are not cultivars. The Planting plan should provide specifications for preparation of nursery stock and include technical details of planting methods (e.g., spacing, micorrhyzal inoculation, etc.)
- An Irrigation Plan that describes the method and timing of watering and ensures removal of watering infrastructure by the end of the monitoring period.
- An Interim Monitoring Plan that includes maintenance and remediation activities, interim performance goals, assessment methods, and schedule.
- A Final Monitoring Plan to determine whether the restoration has been successful that specifies:
  - A basis for selection of the performance criteria,
  - Types of performance criteria,
  - Procedure for judging success,
  - Formal sampling design,
  - Sample size,
  - Approval of a final report, and
  - Provision for possible further action.

➢ *What are some important LCP issues in resource protection?*

♦ Invasive, Non-native Species

The impacts of non-native invasive species on natural plant and marine resource communities are a growing concern. Such species can displace native species and impact natural communities. Consider including requirements for landscaping in your LCP. These could include:

- Professionally prepared landscape plans,
- Permanent implementation of the plans through bonding or deed restrictions,
- Requiring non-invasive plants, and
- Removing non-natives from the site.

Your LCP should also promote other methods to eradicate non-native invasive plants, recommending the most environmentally benign methods available.

LCPs should be updated to include a specific prohibition on the use of non-native invasive plants. The identification of such plants should be tied to authoritative lists, such as the California Invasive Plant Council inventory: http://www.cal-ipc.org/ip/inventory/index.php.

♦ Beach Grooming / Beach Wrack / Grunion

Recent research has reinforced the importance of protecting the beach wrack as part of the marine ecosystem. Beach wrack refers to the piles of seaweed and plant and animal remains that are washed ashore by waves. While this may appear to beach visitors as unsightly debris, wrack accumulates as a result of natural processes. Research has found that it is an important nutrient source and provides micro-habitat for a variety of organisms. Regular grooming of sandy beaches can destroy the wrack and help to degrade the near shore habitat. LCPs should be updated to include policies and management measures for beach maintenance to strike the appropriate balance between protection of this habitat and maintaining the recreational values of sandy beaches.

Beach grooming or other disruptive activities on the high shore can also have negative impacts to grunion. The grunion is a fish that comes ashore in the spring and summer during particularly high night-time tides to reproduce and lay their eggs. The eggs develop while buried in the sand and hatch two weeks later when high tides again wash the high-shore and enable the baby grunion to reach the sea. Where applicable, LCPs should include policies and management procedures that protect grunion by restricting sand-disturbing activities when grunion are present. During those periods, beach grooming and other disruptive activities should only take place above the semi lunar high tide mark

For more information concerning beach wrack see:

- http://www.coastalconservancy.ca.gov/coast&ocean/winter2004/pages/two.htm.

You can find more information on grunion at:

- http://www.dfg.ca.gov/mrd/gruschd.html, and
- http://arachnid.pepperdine.edu/grunion.

To read some discussion of these issues check out the Beach and Sediment Management Program for the Santa Barbara Harbor and Waterfront Area at http://documents.coastal.ca.gov/reports/2006/4/Th12c-4-2006.pdf, and the City of Santa Cruz Beach Management Permit at http://documents.coastal.ca.gov/reports/2006/8/Th12a-8-2006.pdf.

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Protecting Agricultural Resources

Over time, multiple LCP Amendments and permit approvals to provide for individual developments may result in cumulative changes to land use patterns that adversely impact the long term protection of agricultural and rural lands in your jurisdiction. Since LCP certification, many agricultural lands may have been placed into conservation easements, or land subject to Williamson Act contracts may be due for renewal. Thus, your updated LCP should take a comprehensive look at ways to further protect prime coastal agricultural lands in the context of changing development patterns.

➢ *What should updated agricultural policies address?*

Your updated LCP should address the following:

Review the principal Coastal Act policies concerning Agriculture in Sections 30113 30241, 30242, 30243, 30250 and 30222. These statutes can be found at: http://www.coastal.ca.gov/coastact.pdf

- Confirm consistent definitions of prime and non prime agricultural land. The definition of prime agricultural land in the Coastal Act (§30113) references the definition in Government Code (Williamson Act) §51201. "Non-prime agricultural land" means other coastal agricultural lands that are now in use for crops or grazing, or that are otherwise suitable for agriculture.
- Update the inventory and map of all prime and non-prime agricultural land within the coastal zone.
- Update and strengthen methods to determine the feasibility of agricultural use of land.
- Update policies and ordinances to ensure protection of prime agricultural lands through such means as exclusive agricultural use designations, minimum parcel sizes, designation of stable boundaries separating urban and rural areas and restrictions on divisions of land and lot line adjustments.
- Update policies and ordinances that restrict supplemental uses on agricultural lands to avoid conversion of agricultural lands to non-agricultural uses.
- Update policies and ordinances to assure that new residential development proposals are in support of continued agricultural uses of a property.
- Update provisions for required easements and deed restrictions to protect prime and non-prime agricultural lands.
- Revise land use designations and standards for development adjacent to agricultural lands to ensure compatible uses that will protect agricultural activities ("Right to Farm Ordinances").

- Include mitigation requirements for any cases where agricultural land will be impacted by allowed development. Such requirements could include preserving agricultural use in portions of site not developed, preserving other agricultural land, or enhancing or restoring other land for agricultural uses. For example, read the Santa Cruz County LCP Amendment No. 2-05 (Part A) concerning the location of development of public works facilities and protection of agricultural land, at http://documents.coastal.ca.gov/reports/2006/3/Th8a-3-2006.pdf.

➢ *Where can I read some examples of agricultural policies?*

For more information, see the San Luis Obispo Local Coastal Program Periodic Review, July 12, 2001 and Exhibit A pp. 185-244 at http://www.coastal.ca.gov/recap/slo/slo-ag.pdf and http://www.coastal.ca.gov/recap/slo/slo-ch5.pdf.

➢ *What are some key issues in protection of agricultural lands?*

The following highlights some of the most important new information that should be considered in updating policies for protection of agricultural resources.

♦ Protecting Urban-Rural Limit Lines

In updating your LCP, evaluate the extent to which your LCP establishes and maintains existing, stable boundaries separating urban and rural areas consistent with Coastal Act §30241. Many LCPs currently have such urban-rural limit lines. Urban-rural lines serve to concentrate urban growth in a more efficient, sustainable manner. Development authorized outside those limit-lines, though, can significantly undermine protection of rural and agricultural lands. Any modification of such lines as part of an LCP update should only be considered based on updated assessments of projected growth and resource protection needs. Your updated LCPs should assure that new subdivisions and extension of services are authorized only consistent with protection of urban-rural boundaries of the Coastal Act that provide long term protection of agricultural and other resource lands, and that provide for conversion of lands only in a limited set of circumstances (see Coastal Act §30241 and §30242).

See for example, the Commission actions:

- Watsonville Major LCP Amendment 1-99 (6/14/06) at http://www.coastal.ca.gov/sc/lcpawat1-99-rf.pdf, and
- Santa Cruz County LCP Amendment No. 2-05 (Part A) concerning the location of development of public works facilities and protection of agricultural land, at http://documents.coastal.ca.gov/reports/2006/3/Th8a-3-2006.pdf

♦ Protecting Agricultural Lands from Conversion

The Coastal Act policies intend that, in addition to stable urban boundaries, agricultural lands will be designated and restricted through the LCP to agricultural land uses unless a future LCP Amendment is approved that authorizes the conversion of the land to non-agricultural uses. The Coastal Act policies also spell out the viability tests needed to consider such conversions. The Coastal Act policies require that prime agricultural lands are to be maintained in production. Prime and non-prime agricultural lands either on the urban periphery or surrounded by urban uses may be converted of they satisfy standards stated in the Coastal Act §30241(b) and (c) and other applicable provisions of the Coastal Act. All other lands suitable for agriculture may be converted only if conversion is consistent with §30242 and other provisions of the Act. When an LCP Amendment proposes a conversion of agricultural land on the urban periphery under the viability provisions of §30241(b), the viability tests of §30241.5 must be met.

Update your LCP to strengthen and make explicit requirements for the analysis that is required for determining the viability of agricultural lands proposed to be converted. Analysis must include an economic evaluation of the gross revenue and operational costs, excluding land values, of the crops in the geographic areas of the proposed conversion. One of the tests for conversion is that agricultural use cannot feasibly be continued or renewed.

In addition to viability analysis, policies and ordinances of your LCP should also prohibit land divisions, lot line adjustments, legalization of lots through certificates of compliance and development on nonconforming parcels that would undermine the viability of continued agricultural use. While such actions do not rezone land, they can significantly affect the ongoing preservation and viability of agricultural uses by affecting parcel sizes and configurations, and thereby allowing for incremental changes of the primary land use from agriculture to other uses.

♦ Residential Development on Agricultural Lands

One of the more recent trends that threaten agricultural viability is the development of residential uses not in direct support of agriculture on agricultural lands. Non-agricultural residential development can change the real estate values in agricultural areas so as to negatively affect the viability of continuing agriculture. This may be especially true where lands are being used for rural residential estates or “ranchettes” not in direct support of agriculture. For example, see the report *Marin County Agricultural Economic Analysis, Final Report*, Strong Associates, November 2003, prepared for the Marin County Community Development Agency.

Given increasingly high housing costs, agricultural uses cannot often compete with even one single family home on a large parcel or ranch. The trend to develop such “statement” homes, even on larger parcels, also can contribute to changing the character of rural agricultural lands to more exurban residential, and contribute to the loss of long term agricultural uses by increasing the

speculative value of these large parcels as sites for such homes. LCPs should be revised to include performance standards for residential development on agricultural parcels to ensure that conditionally permitted residential housing on agricultural lands, *if permitted at all*, will not diminish the productivity or viability of agricultural land or the ability to keep agricultural land in production.

LCPs must protect coastal agriculture as a priority use under the Coastal Act. One of the more recent tools being pursued by the Commission and others involved in the protection of agricultural lands is the use of affirmative agricultural easements that go beyond the mere restriction of future use of agricultural lands. Such easements may affirmatively require that property owners actively assure that their land is maintained in agricultural uses in perpetuity. Measures to address this issue include such things as:

- Prohibiting non-farm dwellings on agricultural lands,
- Limiting the size of new homes on agricultural lands, and
- Requiring agricultural conservation easements that ensure that land remains in agricultural use as opposed to simply remaining available for agricultural use.

For examples, see the Commission report on A-2-SMC-04-009 (Waddell) at http://documents.coastal.ca.gov/reports/2006/2/F11a-2-2006.pdf and Recommendation 5-08 of the San Luis Obispo Periodic Review cited above.

♦ Effects of Agricultural Structures on Farmland

The Coastal Act strives to protect both the agricultural economy and the agricultural soils in the coastal zone. However, structures such as greenhouses, processing plants and farm labor housing may harm the long-term productivity of the soil. The cumulative effect of these structures may encourage urbanization of the area. Your LCP should have provisions that address potential adverse impacts from structural development on farmland. Some approaches include provisions for affordable housing for farm workers, locating the development on non-productive lands, and coverage limits.

♦ Effects of Non-Agricultural Uses on Agricultural Lands

Throughout rural lands in the coastal zone there is an increasing trend for development of non-agricultural uses in addition to ongoing agricultural operations. Some examples have been proposals for wedding chapels, bed and breakfast inns. These uses can diminish the long term productivity and viability of agricultural land by changing land use patterns, increasing conflicts between agriculture and other uses, potentially changing the primary land uses and making it difficult to keep agricultural land in production. Your updated LCP should establish more explicit criteria that must be met for such supplemental use to be allowed on agriculturally zoned land, include economic studies of existing and potential agriculture which show that continued or renewed agriculture use is not feasible without the proposed supplemental use.

For some discussion of this issue, see, for example, the Commission reports on Appeal No. A-3-98-25 (Scoggins).

♦ Addressing Impacts from the Intensification of Agriculture

If the type of agriculture has changed in an area, for example to more water-intensive crops or vineyards, your LCP should be updated to address the changed conditions resulting from more intensive agricultural activities. In some cases, more intensive agriculture such as vineyard development can require more extensive grading and threaten greater erosion and water quality impacts and impacts to streams and riparian ecosystems from an increase in water withdrawals.

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Planning and Locating New Development

➢ *What should updated development standards include?*

Review the principal Coastal Act policies concerning Development at Sections 30244, 30250, 30252, 30253. These statutes can be found at: http://www.coastal.ca.gov/coastact.pdf

After a decade or more of development authorized under a certified LCP, it is likely your LCP needs comprehensive revision. Most importantly, the background data and provisions of your LCP that affect new development and growth should reflect current land use and public facilities constraints and growth projections. An update should reexamine and revise the designation of the kinds, location and intensity of land uses to: 1) ensure consistency with all Coastal Act policies; 2) reflect current limits to the available capacity of public works facilities (e.g. water, wastewater and roads); 3) reflect protection of priority uses under the Coastal Act; and, 4) ensure Highway One remains a 2 lane road in rural areas. An updated LCP should:

- Update the background data and analysis on current and projected population growth and the current and projected infrastructure capacity.
- Revise the pattern and intensity of planned development to ensure that development can be adequately served by existing public services (e.g. sewer, water and road or transit systems). Ensure that the LCP does not allow for more units than can be served by existing infrastructure capacity.
- Re-examine the land use patterns and revise the designations of the kinds, locations and intensity of land uses to ensure that priority land uses under the Coastal Act remain a priority and are provided for where public services are limited.
- Revise the kinds, locations and intensity of land uses to ensure protection of Highway One as a two lane road in rural areas.
- Ensure that all land has designated use or uses and associated intensities of development, including roads and their rights of way, other public lands, and other non-residential lands. While the intensity of residential land use is typically described by density (homes per acre), intensities for the non-residential land uses could be described, for example, by maximum land coverage, trip generation, floor area ratios, number of rooms, number of employees, or utility use.
- Update the inventory of archaeological and cultural resource areas and revise policies and standards to reflect new statutory requirements for Native American consultation (see below).

- Designate areas where divisions of land are to be limited or prohibited, and designate appropriate parcel sizes to concentrate development and to protect rural and agricultural areas. Update provisions for dedications or in-lieu fees for recreation and open space to accompany new development and to mitigate the cumulative impacts of development.

➢ *Where can I read some examples of updated development policies?*

For examples of some updated LCP provisions for new development see the City of Malibu LUP policies pages of the LUP at http://www.coastal.ca.gov/ventura/malibu-lup-final.pdf and the City of Malibu Zoning Ordinance provisions at http://www.coastal.ca.gov/ventura/malibu-lip-final.pdf.

➢ *What are some of the key issues to be addressed in updated development designations and policies?*

The following highlights some of the most important new information that should be considered in updating policies for locating and planning new development.

♦ Concentration of Development

While several jurisdictions have updated LCPs, many certified LCPs are out of date and have undergone project-driven piecemeal amendments. These dated LCPs no longer provide a current and accurate blueprint for managing development to protect coastal resources by concentrating development into areas able to accommodate it. As evidenced through many coastal appeals heard by the Commission, out-of-date LCPs may not address current constraints on development. Such LCPs may also not reflect new standards to facilitate concentrated development and incorporate "smart" growth tools such as urban/rural limit lines. For an example of an LCP amendment addressing urban-rural limit lines, see the Findings of the City of Watsonville LCP Amendment No. 1-99 for the Pajaro Valley Unified School District High School at http://www.coastal.ca.gov/sc/lcpawat1-99-rf.pdf

♦ Second Units

Since 2002 there have been new requirements in place concerning development of second units on single family residential lots. While changes to the government code changed procedures for coastal development permits for second units, it did not change development standards that apply in the coastal zone or the requirements of the Coastal Commission's appeal authorities. Many local governments have adopted ordinances through LCP Amendments to address second units. Some of the more recent examples include:

- City of Santa Cruz at Santa Cruz LCP Amendment No. STC-MAJ-2-03

- County of Santa Barbara at http://www.coastal.ca.gov/ventura/3-2005-W14b.pdf
- City of Pismo Beach at http://www.coastal.ca.gov/sc/W13a-5-2004.pdf
- City of Redondo Beach at http://www.coastal.ca.gov/lb/W8b-2-2004.pdf

Other jurisdictions that have example ordinances include the counties of Santa Cruz and Ventura, the cities of San Diego, Carlsbad, Carpinteria and Port Hueneme.

♦ Density Bonuses

State law allows for density bonuses for some affordable housing projects. Your updated LCP could incorporate such provisions, but be careful not to supersede the protective policies of the Coastal Act. For example, if part of a site is ESHA, the density bonus may not be used as an override to build in the restricted area. See, for example, this Del Norte County LCP amendment at http://documents.coastal.ca.gov/reports/2006/11/W7b-11-2006.pdf.

♦ Cultural Resources / New Consultation Requirements

New measures were adopted in 2004 (Senate Bill 18) that amended sections of the Civil Code and Government Code to enact new intergovernmental consultation requirements with Native American tribes. The new provisions requires cities and counties to contact, and consult with, California Native American tribes prior to amending or adopting a general plan or specific plan, or designating land as open space.

For more information about these provisions to guide revisions to the LCP, see the guidelines of the Governor's Office of Planning and Research at http://www.opr.ca.gov/SB182004.html.

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Protecting Coastal Scenic Resources

Protection of the scenic resources of the coastal zone is a central part of certified LCPs. As plans have been carried out, significant public views to and along the shoreline and critical scenic views have been protected. However, over time, the incremental approval of individual developments, including minor additions and maintenance activities, may have resulted in the cumulative degradation of public views and scenic resources. It is important that the LCP updates reassess the critical views and scenic landscapes to be protected and refine measures to ensure their protection.

➢ *What should an updated scenic resources section include?*

Review the principal Coastal Act policies concerning scenic resources at Sections 30250, 30251 and 30253. These statutes can be found at: http://www.coastal.ca.gov/coastact.pdf

When beginning an LCP update, it is important to undertake new visual assessments to document how development may have encroached on key public views and scenic areas. An updated LCP should identify and map critical viewsheds, scenic resources and special communities to be protected based on more current information. And, if development previously authorized has impacted public views and scenic resources, revisions to policies and ordinances to avoid further encroachment and to mitigate impacts should be included in the LCP. You should also consider the extent to which development patterns in relatively undeveloped landscapes may affect public views from coastal waters, in an effort to avoid the cumulative degradation of such views.

➢ *Where can I read some examples of updated scenic policies?*

For examples of some updated Scenic Resource provisions, see the City of Malibu LUP policies pages of the LUP at http://www.coastal.ca.gov/ventura/malibu-lup-final.pdf and the City of Malibu Zoning Ordinance provisions at http://www.coastal.ca.gov/ventura/malibu-lip-final.pdf.

➢ *What are some key issues in scenic resource protection?*

The following highlights some of the most important new information that should be considered in updating policies for protecting scenic resources.

♦ Identification of Special Communities

During the initial certification process, many LCPs identified popular destination points as special communities (see box below). When updating

your LCP, you have the opportunity to reexamine and adjust the boundaries of the scenic and special areas that warrant protection. You may also strengthen the measures used to protect the special communities already identified. A good example recently approved by the Coastal Commission is the certification of the City of Carmel-by-the-Sea LCP, which includes a comprehensive set of policies and ordinances designed to protect the special historic character of Carmel exhibited through many of its smaller cottages and informal streetscape. Staff reports for the LUP that was approved with suggested modifications on March 6, 2003 are at http://www.coastal.ca.gov/sc/cmllup-r3.pdf and the Implementation Plan approved with suggested modifications on February 20, 2004, at http://wwwe.coastal.ca.gov/sc/F5c-2-2004.pdf.

Coastal Action Section 20253(5) states: "Where appropriate, protect special communities and neighborhoods which, because of their unique characteristics, are popular visitor destination points for recreational uses."

♦ Improving Scenic Assessment

Updated LCPs should incorporate the newer techniques and requirements for identifying critical viewsheds and for assessing the impacts of proposed development. Particular attention should be given to views to and from public recreation areas, including coastal waters where applicable. This should include documenting existing views, staking the location of structures to assess potential encroachment and detailing any proposed screening through vegetation or building materials.

♦ Maintenance of Visual Screening

LCPs should ensure that avoidance of impacts to scenic resources through site selection and design alternatives such as reducing height and bulk of structures is required as the preferred method of addressing impacts over landscape screening. However, where landscape screening is applied, absent requirements to protect public views over the long term, landscape screening may impact protection of public views. If vegetation is not maintained, it may grow to block public views. Therefore LCP updates should require that the only allowable landscaping is with low growing species that will not obscure or block public views. This could be accomplished by including a policy requiring landscaping plans. For existing landscaping, the LCP should require that it is maintained so as to not block any public views as vegetation matures while at the same time avoiding impacts to any existing habitat.

For some discussion of these issues concerning protection of scenic resources, see the City of Malibu LUP policies pp. 113-120 at http://www.coastal.ca.gov/ventura/malibu-lup-final.pdf and IP ordinance provisions of chapter 6 at http://www.coastal.ca.gov/ventura/malibu-lip-final.pdf. Another resource is: Wendelyn Martz, *Preparing a Landscaping Ordinance*, 1990, Planning Advisory Service.

♦ Telecommunications Facilities

Cell tower proposals, which can have significant visual impacts, have emerged since most of the LCPs were written. There are both legal and policy considerations in addressing these in an LCP update. Be sure to check Federal law requirements as LCP provisions must be consistent with those.

There are some examples of LCPs with specific cell tower provisions:

- Monterey County LCP at http://www.co.monterey.ca.us/pbi/docs/ordinances/Title20/20.64.310.htm, and
- Santa Cruz county LCP Section 13.10.660--Regulations for the siting, design, and construction of wireless communication facilities in http://ordlink.com/codes/santacruzco/index.htm.

Another useful reference is the *National League of Cities and APA, Siting Celluar Towers*, 1997; B. Blake Levitt, ed., Cell Towers, 2000, New Century Publishing.

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Managing Coastal Hazards

Managing coastal hazards is a key component of the coastal program. The Coastal Act aims to reduce risks to life and property and avoid substantial changes to natural landforms. As stated in §30253:

> *New development shall:*
>
> *1) Minimize risks to life and property in areas of high geologic flood, and fire hazard.*
>
> *2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.*

The complete text of the California Coastal Act is available at the Coastal Commission's website—http://www.coastal.ca.gov/coastact.pdf. You'll find policies about coastal resources planning and management in Chapter 3.

Engineered solutions to coastal hazards typically have significant impacts on coastal resources. In updating your LCP, keep in mind that the primary approach to hazards should be *avoidance*. Also remember that your LCP should clearly articulate that stability should be assured for the life of a development.

➢ *What should an updated hazards section include?*

Similar to other policy areas, the hazards component of your LCP should reflect the geography of your jurisdiction. In order for new development to avoid hazards, your LCP should include current information, such as wave uprush studies, data on bluff retreat and beach erosions rates, and mapping or inventories of hazardous areas. Be sure to consider any changes since your last update so that designations of hazardous zones reflect actual conditions.

♦ Topics

Hazard policies should direct the siting and design of new development so as to minimize risk to life and property and impacts to coastal resources. Typically, they will address the following issues (as applicable):

- Beach areas subject to seasonal or long-term erosion.
- Areas subject to high waves, such as those from storms, surges and seiches.
- Coastal or riverine flood hazards.
- Tsunami inundation runup areas.
- Sea level rise, from both a short and long term perspective.
- Beach nourishment/sand supply for beaches vulnerable to wave damage and erosion.

- Restricting future armoring for new development.Geologic hazards, like bluff and cliff instabilities.
- Landslide hazard areas.
- Expansive or highly corrosive soils.
- Subsidence areas.
- Grading and vegetation clearance on steep slopes.
- Fire hazard areas.
- Seismic hazard areas.
- Areas of potential liquefaction.

♦ Definitions

Your LCP should include clear definitions. Certain terms, like coastal bluff and bluff edge must be defined in the LCP and conform to the California Code of Regulations (see box). Bluff must also be defined, although the regulations do not currently provide one. Other definitions helpful when updating hazards policies include beach, coastal bluff, cliff, sea cliff, infill, and economic life. The Newport Beach LCP glossary contains good examples of such definitions: http://www.city.newport-beach.ca.us/Pln/LCP/LCP.htm.

The California Code of Regulations, Title 14, Division 5.5, Chapter 8, Subchapter 2, (LCPs & LRDPs) can be found at http://government.westlaw.com/linkedslice/default.asp?SP=CCR-1000

One of the few opportunities to improve hazard reduction for existing development is immediately after that development is damaged or destroyed by hazardous conditions. LCP permit requirements for development damaged or destroyed by natural disasters should enable repairs and development replacements that maximize hazard avoidance and conformance with current hazard requirements.

➢ *What are some important issues in hazards management?*

♦ Setbacks

A critical element of every LCP is the designation of appropriate review and setback criteria for bluff, cliff, and beach level development. You should ensure that the proposed land division of coastal fronting property that creates hazardous parcels is not allowed. New parcels should only be created if they can be developed without ever requiring shoreline protection for the development. Your LCP should prohibit land divisions that will result in parcels that are unbuildable.

For cliff and bluff-top development, your LCP should require a setback for structures built on shallow foundations that assures that it will be stable for its economic life. The relative stability of a slope can be calculated quantitatively by a slope stability analysis, in which the forces tending to resist a potential landslide are divided by the forces tending to drive a potential landslide. The industry standard for a "stable" site is that this quotient, called a factor of safety, be at least 1.5 in the static condition, and 1.1 to 1.2 under seismic

Planning for Tsunamis

- *Update hazards maps.*
- *Avoid developing in hazardous areas.*
- *If avoidance is impossible, use low impact engineering techniques, such as elevating structures.*
- *Site critical facilities outside of the hazardous zone.*
- *Keep policies current and based on the latest science.*

conditions. The factor of safety generally increases with distance from the bluff edge, so the point at which the factor of safety reaches 1.5 constitutes a minimum setback for existing conditions. Because coastal bluffs are steadily retreating, however, in order to assure that the site will still have a 1.5 factor of safety at the end of its economic life, the amount of bluff retreat expected over its life must be added to the initial setback.

Your LCP should require a site analysis for bluff-top development to determine the present-day setback needed to achieve a factor of safety of 1.5. To find the total setback needed, add to that figure the predicted bluff retreat for the expected life of the project, such as 100 years of bluff erosion. The Coastal Commission's staff geologist presented a memo on the topic to the Coastal Commission (http://www.coastal.ca.gov/W-11.5-2mm3.pdf) and published a paper called *Establishing Development Setbacks from Coastal Bluffs* (http://www.pubs.asce.org/WWWdisplay.cgi?0414121).

Setbacks are also important for developed cliff and bluff top lots since new development such as additions, partial tear-downs and rebuilds are often proposed subsequent to site development. Such new development could be proposed for locations closer to the bluff than the existing development, at the same distance as the existing development, or further than the existing development. The LCP should account for these various scenarios where both existing protective structures currently exist and where they do not. While existing development is eligible to be considered for protective structures, the LCP should ensure that an addition or remodel does not 1) accelerate the need for a shoreline structure (e.g., the addition should not be further seaward than the existing structure) or 2) increase the likelihood of a future seawall beyond the existing development's expected life (e.g., the existing structure is within the bluff top setback and nearing the end of its expected life and the addition is substantial and at the same location). Also, LCP non-conforming provisions should not contradict such setback provisions.

Setback policies for new development at beach level are also critical. For such development, your LCP should require wave uprush studies and provide guidelines for siting new development. At a minimum, the wave up-rush studies should consider the consequences of a low-probablility wave event (such as the 1% annual probability. Also known as the 1 in 100 year event) with the following beach and water conditions:

- Seasonally eroded beach with long-term erosion comparable to what could be expected to occur over the life of the proposed development.
- High tide combined with the increase in mean sea level expected to occur over the life of the proposed development.

Development should be sited to avoid the zone of wave run-up. If complete avoidance is not practical, avoidance should be maximized and development should be designed, through features such as elevation, to protect against the consequences of unavoidable hazards. However, development that is so hazardous that it may constitute a public nuisance should not be allowed. You

can also consider providing incentives for locating development away from hazardous coastal areas.

♦ Natural Disasters

Historically, LCP policies have not adequately addressed hazards caused by certain natural disasters. These include winter storm events (especially those caused by an El Niño conditions), tsunamis, earthquakes, and landslides. It is important to realize that during the last 20 years, much more information and science has become available. You should look to recent scientific research as knowledge about coastal hazards is continually evolving. For example:

- The California Geological Survey routinely updates maps of seismic hazards,
- The Governor's Office of Emergency Services (OES) regularly updates its State Multi Hazard Plan,
- OES has worked with NOAA to improve tsunami inundation and run-up maps and provide better information on tsunami preparedness,
- The National Weather Service has developed a Tsunami Ready program to help communities plan for a tsunami,
- Many agencies are working to improve our ocean observing systems and provide better information on oceanic and weather conditions, and
- FEMA is updating the coastal flood maps.

♦ Sediment Supply

Loss of sediment/sand supply to the beach and the nearshore environment has multiple deleterious effects.

1) Hazards are increased because of increased erosion and subsequent damage from waves,
2) Coastal recreation opportunities are decreased (see Section 1: Public Access), and
3) Armoring becomes necessary in places not needed before (see Section 9: Shoreline Erosion and Protective Structures).

The California Coastal Sediment Management Workgroup facilitates regional approaches to protecting, enhancing and restoring California's coastal beaches and watersheds through federal, state and local cooperative efforts. Read about it at http://www.dbw.ca.gov/csmw/csmwhome.htm.

Consider including language in your LCP to advance a regional management approach to sediment supply, one that accepts the value of beaches and works to improve them. An LCP can identify local involvement in regional opportunity (see box). Your LCP can also look at the level of armoring in your community and identify ways to mitigate impacts to sand supply, public access, and recreation.

➢ *Where can I read some good examples of LCP hazards policies?*

Two recently updated LCPs provide some good examples of hazards policies, ordinances, and definitions:

- The City Of Malibu at http://www.ci.malibu.ca.us/index.cfm?fuseaction=detailgroup&navid=204&cid=1576, and
- The City of Newport Beach at http://www.city.newport-beach.ca.us/Pln/LCP/Internet%20PDFs/CLUP%20Part%203.pdf.

➢ *What are some new directions in hazards management?*

♦ No Adverse Impact (NAI) Floodplain Management

NOAA's Coastal Services Center recently released the final draft of *The Coastal No Adverse Impacts Handbook*, put together by the Association of State Floodplain Managers (ASFPM). As they define it, NAI flood management is where the action of one property owner does not adversely impact the rights of other property owners, as measured by increased flood peaks, flood stage, flood velocity, and erosion and sedimentation. ASFPM developed a toolkit of ways that communities could go beyond the basic FEMA recommendations for flood plain management to apply the NOI approach. For more information on NOI, visit http://www.floods.org/home/default.asp.

♦ Multi-Hazard Approach

FEMA is now promoting an "all hazards approach" for hazards management. Rather than planning for each type of hazard separately, this approach looks at the whole environment, recognizes the positives and negative aspects of where to build, and then considers ways to mitigate for the various hazards. Community resilience is being emphasized. FEMA has published the *State and Local Guide 101: Guide for All-Hazard Emergency Operations Planning* (http://www.fema.gov/plan/gaheop.shtm).

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Updating the Shoreline Erosion & Protective Structures Policies of the LCP

Coastal Act Sections 30211, 30221, 30251, and 30253 all place high priority on preserving the ocean and recreational value of beaches.

Shoreline protective structures often have negative impacts on the coastal environment. As explained in the Coastal Hazards Section, hazard-avoidance, rather than engineered protection, should be your primary goal. The individual and cumulative adverse effects of constructing shoreline protective devices on bluff faces, sandy and rocky beach areas, and on sensitive coastal resources have been well-studied. Some impacts include:

- Direct loss of sandy and rocky intertidal areas that often have been found to be a critical component or the marine ecosystem,
- Interruption of the natural shoreline processes, that may contribute to erosion of the shoreline in many areas,
- Impeding public access to and along the coastline as a result of the structure's physical occupation of the beach, and
- Erosion impacts.

Policy §30235 states "Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Existing marine structures causing water stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible."

When working on your LCP, you can plan for new development in a way that reduces the need for shoreline protection, minimizes adverse impacts of allowed protection, and facilitates alternative forms of shoreline protection that do not involve armoring. Remember that most shoreline protective devices and beach nourishment projects meet the Coastal Act's definition of development found in §30106 of the Coastal Act (http://www.coastal.ca.gov/coastact.pdf). The Coastal Act places a high priority on preserving the ocean and recreation value of beaches (see box for examples of sections). Section 30235, quoted in the side bar, describes the conditions under which structures may be allowed.

➢ *What should an updated LCP section about shoreline protective devices and beach nourishment include?*

♦ Policies

Most LCP policies dealing with shoreline protective devices incorporate the relevant Coastal Act policies. In addition to Chapter 3 policies, your LCP policies should illustrate how the Coastal Act will be carried out, taking into consideration the unique features and needs of your area, including beach nourishment. Your LCP might further address shoreline hazards, protective devices, beach erosion, and responses to beach erosion besides armoring.

♦ Maps and Inventories

- An updated map or inventory and descriptions of existing shoreline protective devices, including revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls and other such constructions and their permit history. Include a review of public access to the beach.

♦ Definitions

Your LCP should include clear definitions. In relation to shoreline protective structures, these could include:

- Development and Existing Development
- Structure
- Principal structure
- Armoring
- Cumulative effects
- Littoral cell

You could define Principal structure as any primary living quarters, main commercial buildings and functionally necessary appurtenances to those structures such as septic systems and infrastructure.

➢ *What current ideas and tools might be included in an updated shoreline protection component?*

For new development, consider language:

- Ensuring that new development will not ever need a shoreline protective device and requiring conditions to ensure no future seawall,
- Requiring that accessory structures be constructed so as to be relocated should they become threatened by erosion,
- Identifying alternative protection for septic systems, including relocation,
- Stating the value of beaches and explaining how to improve them through sediment management.

For existing development, consider:

- Requiring an analysis of alternatives capable of protecting the existing structure from erosion,
- Requiring detailed information, such as the:
  - Amount of beach that will be covered by the shoreline protective device,
  - Amount of beach that will be lost over time through passive erosion,
  - Total lineal feet of shoreline protective devices within the littoral cell where the device is proposed, and
  - Cumulative impact of added shoreline protective devices for the structure's littoral cell.

Chapter 5 of the Beach Erosion and Response (BEAR) Guidance Document, created in 1999, provides information for planners working on the shoreline protection policies of their LCP (http://www.coastal.ca.gov/la/docs/bear_ch5.pdf). For a full copy of BEAR, call the Technical Services Unit at 415.904.5240.

- Describing tools, such as waivers, that would encourage the relocation of threatened structures, rather than constructing shoreline protective devices,
- Annually notifying all blufftop property owners that the placement of emergency shoreline protective devices shall be allowed only when the need for such protection was in fact caused by a sudden, unexpected occurrence demanding immediate action to prevent or mitigate loss or damage to life, health, property, or essential public services,
- Developing a program to allow for the mitigation of seawall impacts through payment of an annual or regular fee that is used to replenish beaches in the same littoral cell as the seawall,
- Ranking the types of permissible shoreline protective devices in order of least to most potential coastal impact and set forth technical criteria and standards for the structural design of shoreline protective devices that have the least potential for coastal impact,
- Prohibiting new shoreline protective structures from extending onto a beach farther than a straight line connecting the nearest corners of adjacent shoreline protective structures, if any,
- Requiring new shoreline protective devices to cover the least amount of beach area as is necessary to provide adequate protection for the existing principal structure,
- Sending notices of shoreline protective device permit applications to all local governments within the same littoral cell,
- Prohibiting additional permanent structures on bluff faces, except for engineered public beach access where no feasible alternative means of public access exists,
- Requiring all existing, non-permitted shoreline protective structures constructed after January 1, 1973 to obtain a coastal development permit, and
- If an in-lieu fee mitigation program exists or is created, requiring payment of an in-lieu fee to support beach nourishment efforts in a manner proportionate to the quantifiable effects of the shoreline protective device on the amount of sand that would have been nourishing the beach in the absence of the shoreline protective devices.

Some of the more common engineering and design approaches to protect shorefront structures

- *moving the structure*
- *beach nourishment*
- *seawalls and bulkheads*
- *revetments*
- *upper bluff stabilization*
- *surface and groundwater*
- *shotcrete and gunnite*

For long term planning, consider:

- Taking an inventory of available studies on local and regional coastal processes and beach resources and participating in studies to fill in information gaps about regional effects of shoreline protective structures on beach erosion and methods to counteract beach erosion,
- Establishing an overlay or geologic hazard assessment district and designate areas of coastal resource significance on the LUP and zoning

maps, to limit in-filling for relatively undeveloped areas and to limit seaward encroachment of development,

- Creating and maintaining a database/file of geotechnical reports from individual projects for use in analysis of regional effects of shoreline protective structures, including documentation of interference with sand transport, loss of sand from the beach, the amount of beach area already covered by shoreline protection devices, location of such encroachments, and the cumulative impacts of those devices on recreational use,
- Developing an in-lieu fee mitigation program to allow for mitigation of seawall impacts through payment of an in-lieu fee that is used to replenish beaches in the same littoral cell as the seawall,
- Monitoring and commenting on other jurisdiction's activities which may affect natural sand movement and supply on the local government's beaches,
- Developing a comprehensive shoreline protection program that includes regular shoreline surveys to develop short and long-term shoreline trends, identifying priorities for types of shoreline protection, and developing programs for opportunistic beach nourishment using cleaned dredge material, clean material from flood control structures, clean excavation material and other innovative sources,
- Identifying which beaches have priority for nourishment,
- Ranking the types of permissible shoreline protective devices in or of least to most potential coastal impact and set forth technical criteria and standards for the structural design of shoreline protective devices,
- Encouraging voluntary consolidation or purchase of property or development of a transfer-of-development credit program as a means to reduce development potential of coastal fronting land,
- Seeking federal and state funds available for studies about the impact of beach erosion on beach access, the source of harbor deposition material, the effect harbor deposition has on beach replenishment down coast of the harbor, the impact of harbor dredging on potential tsunami hazards, the direct and indirect costs of harbor dredging to the local government or Harbor District,
- Join or establish a regional shoreline authority that will enable mutual support and coordination on shoreline issues that are of concern beyond an individual jurisdiction.

➢ *What are some emerging LCP issues related to shoreline erosion and protection?*

As you update your LCP, keep in mind the long-term consequences of shoreline armoring during a time of rising sea level, including the immediate and long-term repercussions on beaches and recreation.

♦ Monitoring and Maintenance Issues

Most shoreline protection efforts (structures or nourishment) need occasional maintenance for the protection effort to continue to perform effectively. In many cases, maintenance occurs only when someone notices that there is a possible problem, following a major storm event which may have damaged the shoreline protection, or when there is extra sand or rock from another project and maintenance can be done conveniently. An alternative to random maintenance is to initiate a monitoring program which provides triggers or conditions which would lead to some form of maintenance.

Maintenance also brings up the issue of how to deal with repair of a seawall that has reached the end of its economic life. Your policies should address the potential impacts of the "repaired" wall, particularly if the impacts of a structure in that location have never been addressed. In addition, if a seawall is at the end of its economic life, this is an appropriate time to consider whether any type of shore protection is still necessary, and if some protection is necessary, is the existing structure the type and design that has the least potential for future and long-term impacts to coastal resources.

Procedurally, some seawall maintenance will require coastal permits (see Code of Regulations §13252). For more information, read more from Coastal Commission's staff engineer in *Procedural Guidance Document: Monitoring*, written in January 1997 and found at http://www.coastal.ca.gov/pgd/pgd-mon.html#Introduction.

♦ Minimizing and Mitigating Impacts of Armoring

When updating your LCP policies, require that all impacts of shoreline armoring be minimized to the extent possible. This has typically included minimizing the encroachment on the beach and designing the structure to be visually compatible with the environment.

When the opportunities to minimize impacts are exhausted, your policies should require mitigation for impacts that cannot be avoided. Such impacts include:

- Encroachment,
- Passive erosion through fixing of the back beach, and
- Compensating for sand lost.

The Report on In-Lieu Fee Beach Sand Mitigation Program: San Diego County, published in 1997 and available at

http://www.coastal.ca.gov/pgd/sand1.html, contains helpful information and ideas on how to mitigate impacts from seawalls.

Beyond the impacts listed above, the Coastal Commission has addressed the effects of seawalls by examining the economic impacts of shoreline armoring on recreation and habitat loss and requiring mitigation for these impacts. For examples, see

- Application 3-02-024, Ocean Harbor House Seawall, found at http://www.coastal.ca.gov/sc/Th13a-1-2005.pdf, and
- Application 6-05-72, Las Brisas Condominium HOA, found at http://www.coastal.ca.gov/sd/W8e-10-2005.pdf.

♦ Beach Nourishment

As discussed, loss of sediment/sand supply can have many damaging effects.

- Hazards are increased because of increased erosion and subsequent damage from waves,
- Coastal recreation opportunities are decreased, and
- Armoring becomes necessary in places not needed before.

Consider including language in your LCP to advance a regional management approach to sediment supply, one that accepts the value of beaches and works to improve them. An LCP can identify local involvement in regional opportunity (see box). Your LCP can also look at level of armoring in your community and identify ways to mitigate impacts to sand supply, public access, and recreation.

The California Coastal Sediment Management Workgroup facilitates regional approaches to protecting, enhancing and restoring California's coastal beaches and watersheds through federal, state and local cooperative efforts. Read about it at http://www.dbw.ca.gov/csmw/csmwhome.htm.

♦ Replacement of Primary Structures that Have Protective Devices

Another emerging topic of concern is creating policies to determine how to site a structure that is replacing an old structure that has been protected by a seawall. Your LCP policies could tie the seawall to the structure for which it was built. In reviewing such development applications, the Coastal Commission has considered the stability of the new structure without a seawall.

➢ *Where can I read some examples of LCP hazards policies?*

The following LCPs provide some good examples of shoreline erosion and protection policies, ordinances, and definitions.

- City of Imperial Beach http://municipalcodes.lexisnexis.com/codes/imperial/.

- City of Ventura General Plan
  http://www.cityofventura.net/depts/comm_dev/generalplan/August8_GeneralPlanDraft.asp.
- Marin County
  http://www.co.marin.ca.us/depts/CD/main/comdev/ADVANCE/coastal.cfm.
- The City of Malibu
  http://www.ci.malibu.ca.us/index.cfm?fuseaction=detailgroup&navid=204&cid=1576.

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Energy and Industrial Development

Review the principal Coastal Act policies concerning energy and industrial facilities at Sections 30255, 30260 through 30264, 30232, 30250. These statutes can be found at: http://www.coastal.ca.gov/coastact.pdf

Many of the new trends in energy and industrial development concern new or expanded onshore and offshore development of: oil and gas facilities, Liquefied Natural Gas (LNG) facilities, telecommunications cables, alternative energy (e.g. wave and wind technologies), and other new industrial technologies. While offshore development is regulated by the state, LCPs play a critical role in addressing onshore projects and onshore components of offshore projects, and should be updated to address these trends. Older LCPs should also be updated to address issues related to expansion or reuse of existing structures and abandonment of older facilities. At the same time, other industries, such as aquaculture, are also undergoing change. As a result, it is important that LCPs contain updated land use designations, policies and ordinances capable of addressing changing demand for energy and coastal dependent industry and responding to emerging technologies and their potential impacts.

➢ *What should an updated LCP include?*

- An updated map and description of existing energy facilities and coastal dependent industries within the coastal zone, and revision of the inventory of land zoned for industrial uses,
- Updating of the allowable uses permitted in industrial zones as well as designation of compatible land use categories adjacent to energy and industrial facilities and hazardous industries,
- Updated information on industrial and energy facility expansion plans and proposals,
- Revised policies regarding the expansion and location of coastal dependent industrial facilities, multi-company use of existing facilities, the location of hazardous industrial development, and the expansion and location of non-coastal dependent industrial development, and
- Provisions that clarify coastal development permit requirements for energy and industrial facilities.

➢ *Where can I read some examples of current LCP energy components?*

A couple of local jurisdictions that handle many coastal energy projects have examples of policy and ordinances:

- Excerpt of the County of Santa Barbara LCP (Energy Component) at http://www.countyofsb.org/energy/documents/policies/Policies_3-6.pdf,

- The County of Ventura LCP at http://www.ventura.org/planning/pdf/Coastal_Area_Plan.pdf and http://www.ventura.org/planning/pdf/ordinances/coast_zone_ord/coastal/coastal_zone_ord_6_3_03.pdf.

➢ *What are some key issues in energy and industrial development?*

The following subsections highlight some new information that should be considered in updating policies for onshore energy and coastal dependent industrial development.

♦ Directional Oil and Gas Drilling

Improvements in drilling technologies now make it easier to reach reservoirs through directional drilling from existing facilities, thus allowing access without development of new drilling sites. This can help to minimize site disturbance yet can also raise new issues if such directional drilling extends the life of aging industrial sites. In addition, improvements in directional or "extended reach" drilling technology make possible extracting oil and gas from onshore sites in lieu of installing new offshore drilling platforms.

♦ Decommissioning/Abandonment of Facilities

If there are aging industrial and energy facilities more than 20 years old in a jurisdiction, the LCP may need to be updated to develop a new set of policies to address the decommissioning and remediation of such old facilities. LCP policies should address such things as timing of equipment removal, pipeline removal/abandonment, site contamination assessment, site restoration requirements, etc.

♦ Liquefied Natural Gas (LNG)

Proposals for development of Liquefied Natural Gas processing facilities have been developing in the past few years. While many sites are located offshore and not in local government jurisdiction, some terminals and related facilities may be proposed for onshore port areas and offshore facilities may have onshore components. It is important that LCPs have up to date policies and ordinances to address such onshore components. Some of the issues that should be reviewed and where appropriate addressed through revised policies and ordinances include:

- Spill prevention and response provisions,
- Land Use designations to locate facilities (such as onshore re-gasification and storage tanks) in manner to minimize risks to life and property,
- Impacts from pipelines and pipeline landings,
- Impacts of truck transportation,
- Water quality impacts,

- Impacts to fishing and recreational boating, and
- Multi-company consolidation of facilities and provisions for open or managed access to facilities.

For more information on potential local issues to guide revision of LCP policies see:

- Commission comment letter on Draft EIR/EIS for the Long Beach LNG Import Project at http://www.coastal.ca.gov/energy/lng/comments-lng-lb-12-2005.pdf, and
- Various presentation slides from the California Coastal Commission Meeting Workshop on LNG Hazards and Safety Implications, April 14, 2005 which can be found at: http://www.coastal.ca.gov/.

♦ Power Plants

Since 2001 the Coastal Commission has reviewed at least six proposals to renovate and rebuild older power plant facilities to expand the life of the facilities and to increase electrical generating capacity. The Coastal Act requires the Coastal Commission to designate areas where power plants may not be located due to impacts on coastal resources, and LCPs developed in the 1980s reflect that guidance. More recently, at least two State policies and one court decision could eliminate or reduce the use by coastal power plants of once-through cooling systems. In 2006, the Ocean Protection Council adopted a policy to reduce the adverse effects of these systems. The State Water Resource Control Board is considering a draft policy that could reduce their use, and in 2007, the Federal 2nd Circuit Court issued a decision that could eventually eliminate or reduce the use of many once-through cooling systems. Existing LCPs should be reviewed to assure that policies adequately address possible expansion and/or decommissioning of facilities, and address the likelihood that power plant once-through cooling systems will be phased out over the next several years and replaced with alternative cooling systems.

For background on power plant siting see also:

- State Lands Commission Policy— http://archives.slc.ca.gov/Meeting_Summaries/2006_Documents/04-17-06/ITEMSANDEXHIBITS/R71ExhA.pdf.
- State Water Resource Control Board Draft Policy— http://www.waterboards.ca.gov/npdes/cwa316.html.
- California Energy Commission— http://www.energy.ca.gov/2005publications/CEC-700-2005-013/CEC-700-2005-013.PDF and *http://www.energy.ca.gov/2005publications/CEC-700-2005-013/CEC-700-2005-013-AP-A.PDF*.
- 2nd Circuit Court decision - http://www.catf.us/advocacy/legal/CWIS/RiverkeepervEPA%20P2%2004-6692-ag_opn.pdf

♦ Desalination

In the last decade, as technologies have developed, more jurisdictions are exploring development of desalination facilities to provide potable water supplies for new development. However, older LCPs did not take into account this possible water source and the designated kinds, location and intensity of development standards also did not reflect availability of water supplies through such source.

LCP Industrial and Public Works policies should be updated to develop revised siting and design standards for the construction and operation of desalination facilities. These standards should promote such things as use of subsurface intakes if feasible and should provide for ownership by public entities in order to ensure public access to coastal water resources and adequate protection of water quality and other environmental resources. The LCP must also identify local water conservation efforts and opportunities and whether a proposed desalination facility fits within the local water supply portfolio. It should also address desalination's relatively high energy use compared with other water sources, including conservation measures. The LCP must also address the impacts of growth and intensity of development should such water supplies become available and the LCP must tie the amount of water provided through such facilities to approved growth levels in the water service area. The Coastal Commission report referenced below discusses these and other issues that will affect how a proposed desalination facility may or may not conform to Coastal Act requirements.

For more information about Desalination issues under the Coastal Act see:

- California Coastal Commission, Seawater Desalination and the California Coastal Act, March 2004 at http://www.coastal.ca.gov/energy/14a-3-2004-desalination.pdf.

For some LCP Amendment actions see:

- Commission action on the City of Sand City LCP Amendment 1-03 at http://www.coastal.ca.gov/sc/Th10b-3-2004.pdf.

For some examples of recent CCC permit actions see permits for development of Pilot Desalination Facilities in the Cities of Santa Cruz and Long Beach:

- 3-06-034 City of Santa Cruz at http://documents.coastal.ca.gov/reports/2006/10/W11a-10-2006.pdf.
- A-5-LOB-03-239 City of Long Beach at http://www.coastal.ca.gov/energy/Th10a-10b-8-2003.pdf.
- A-3-05-10 City of Sand City desalination facility at http://www.coastal.ca.gov/sc/5-2005-W8a.pdf.

♦ Aquaculture

Development and management of aquaculture and mariculture facilities has changed in the last two decades. Such facilities must be registered with the Department of Fish and Game and will need a lease from DFG, triggering new standards recently adopted into law. Even facilities not requiring a lease from the DFG must still meet the standards in order to address requirements under the Coastal Act. Some of these facilities may be within local permit jurisdiction. As a result LCPs should clarify that such facilities require a coastal development permit. Updated policies should also reassess siting and design standards for facilities (including support structures such as, pens, nets, screens, anchors, holding tanks, intake and outfall lines, etc.) to ensure that the LCP adequately addresses potential adverse impacts such as:

- Fish escapes, including potential adverse impacts from genetic pollution of the wild stock, the transmission of disease from cultured fish to the wild stock, and the potential for cultured fish to become an exotic invasive species,
- The culture of high trophic-level fish on stocks of low trophic-level fish and the ecosystem as a whole,
- Organic pollution and eutrophication, including potential adverse impacts to the benthic environment,
- The use of chemicals, including the use of antibiotics and/or anti-fouling treatments for fish pens,
- Space and/or use conflicts,
- Physical effects to the seafloor from anchors and/or other structures, and
- Anti-predation devices.

♦ Emerging Technologies

Commercial technologies to produce energy from wind, waves and tides have advanced. While most wave energy proposals are offshore, local governments may see more proposals for onshore support facilities in conjunctions with large industrial offshore proposals or proposals for development of other alternative energy facilities onshore, such as wind and solar energy facilities.

LCPs should anticipate impacts from such emerging technologies and ensure that updated policies are adequate to address, for example,

- Protection of visual resources,
- Protection of wildlife,
- Conflicts with other users of the coast such as commercial fishing and recreational users,
- Shading of marine environment and other marine resource impacts,

- Changes to littoral transport patterns, and
- On-shore components of offshore communication cables (such as connections and facilities).